



Joint Base Lewis McChord Sustainability Program

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SUSTAINABILITY:

“From there and back again”



EO 13514 (2009) ~ Federal leadership in Environmental, Energy and Economic Performance

DoD SSPP (2010) ~ The DoD Strategic Sustainability Performance Plan establishes a path by which DoD will serve as a model of sustainability for the nation while enhancing our ability to achieve our mission

Army Strategy for the Environment (2004) ~ encompasses mission, environment and community; focusing on six goals that embrace sustainability

ASCP (2010) ~ The Army Sustainability Campaign Plan which will institutionalize sustainability in doctrine, policy, training, operations and acquisitions

Installation Management Campaign Plan (2010-2017) ~ Sustainability inculcated into the 6 Lines of Effort to ensure future installation capabilities by integrating sustainability into planning, training, procurement and operations

Installation Sustainability Program (2002) ~ 2nd Army installation to plan and implement a sustainability program; employing sustainable action teams, integrated with EMS and governed by a Sustainability Board chaired by Senior Mission Commander.





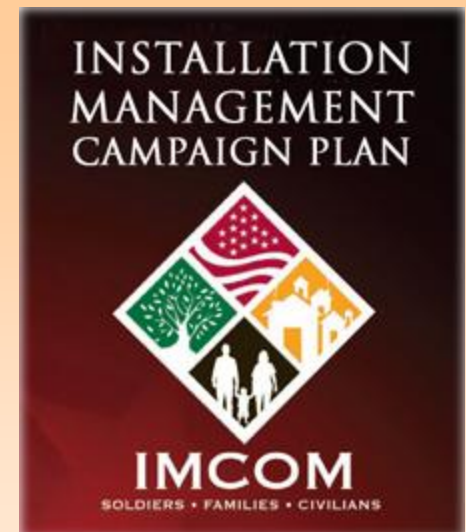
Installation Management Command (IMCOM) Plan – 6 Lines of Effort



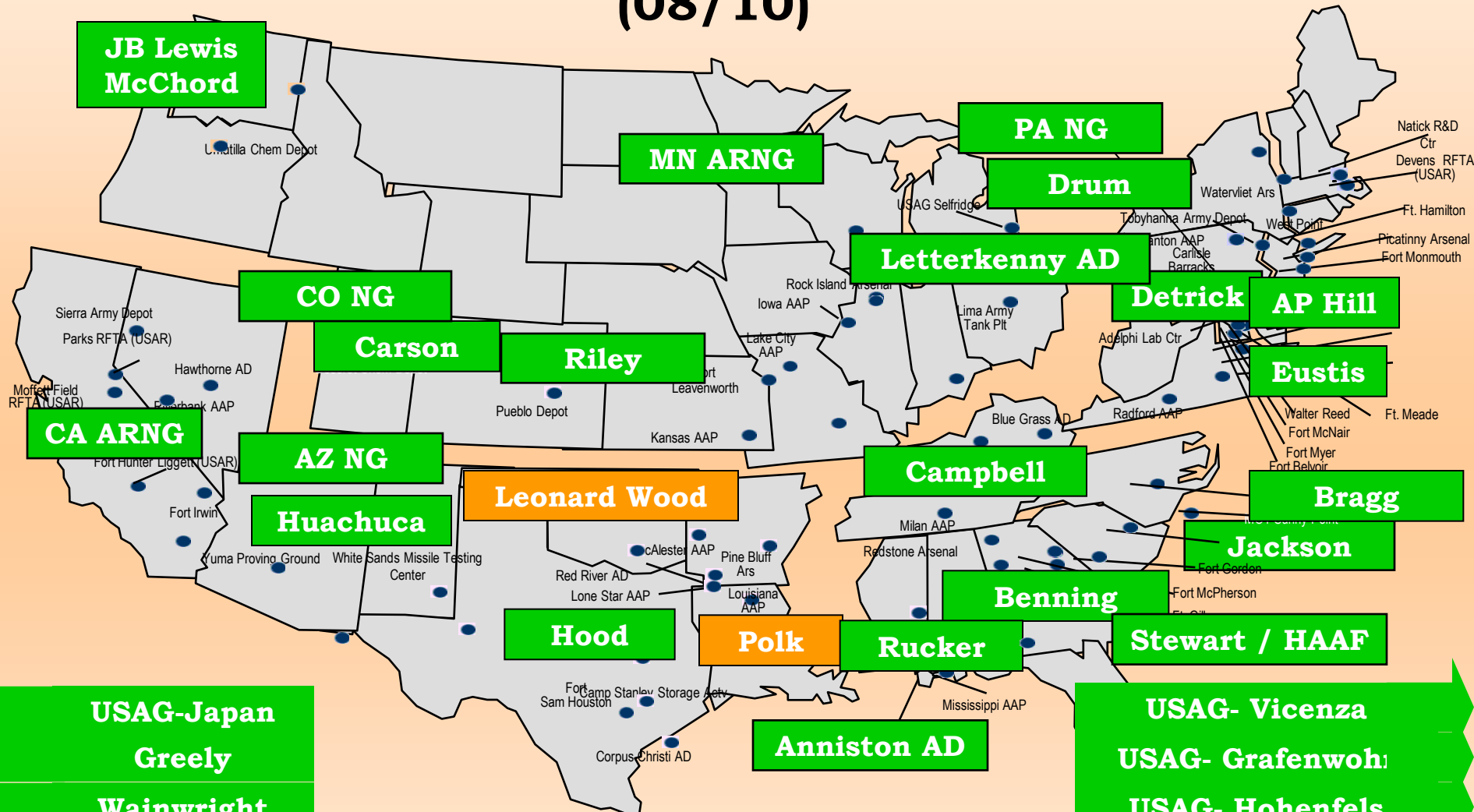
Installation Management Campaign Plan (ICMP) (2010-2017) ~

- **Sustainability inculcated into the 6 Lines of Effort to ensure future installation capabilities by integrating sustainability into planning, training, procurement and operation**
- **The IMCP is organized and will be executed along six Lines of Effort:**
 - #1 - Soldier, Family and Civilian Readiness**
 - #2 - Soldier, Family and Civilian Well Being**
 - #3 - Leader and Workforce Development**
 - #4 - Installation Readiness**
 - #5 - Safety**
 - #6 - Energy Efficiency and Security**

IMCOM will deliver sustainable installation communities that enable strong Soldiers and resilient Families for a mission-ready Army



Progress in Army Sustainability (08/10)



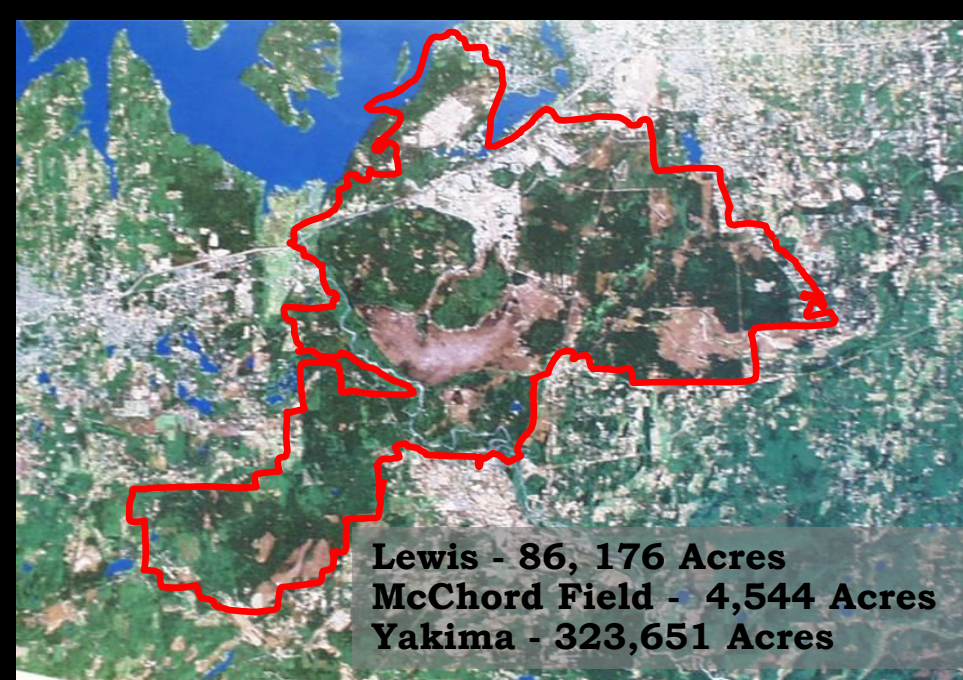
Installations implementing Sustainability Plans

Current and Future Installation Sustainability Planning Efforts

Sustainability at JBLM

- **Military members – 40,228**
- **Civilian Workforce ~ 15,000**
- **Family Members – 61,147**
- **Industry – training & maintenance**
- **Major utilities**
- **Hospital (MAMC)**
- **Housing - family and single soldiers**

- **An acknowledged leader in the Army sustainability program**
- **8 aggressive goals - to sustain the military training mission**
- **Partner in Army/ Corporate/ Academic technology demonstrations/validations**
- **Cooperative relationships with Regional Sustainability efforts**





**Executive Order 13514 ~
JBLM Sustainability Goals**

Air Quality Team



EO 13514

- 1. Reduce Greenhouse Gas emissions**
- 2. Use low greenhouse gas emitting vehicles (including alternative fuel vehicles)**
- 3. Reduce fleet consumption of petroleum products 2% annually**

**DOD SSPP
Objective(s)**

- 1. Use of petroleum products by vehicle fleets reduced 30% by FY20 relative to FY05**
- 2. Use & Release of Chemicals of Environmental Concern minimized**

**ASCP Strategic
Task**

- 1. Complete Greenhouse Gas assessments**
- 2. Achieve Greenhouse Gas reduction goals**

JBLM
(IMCOM LOE 4 & 6)

Reduce installation stationary source and non-source motor vehicle air emissions 85% by 2025



Air Quality



- **Alternate Fuels.**
 - 47% of GSA vehicle fleet alternate fuel capable
 - Three alternate fuel dispensers - E85, B20 and CNG
 - MCA project in construction to build a consolidated alternate fuel station
- **Neighborhood Electric Vehicles (NEV)**
- **Rideshare program**
- **Increase availability of mass transit**





Executive Order 13514 ~ JBLM Sustainability Goals

Energy Team



EO 13514

- 1. Reduce energy intensity in buildings**
- 2. Increase use of renewable energy**
- 3. Implement renewable energy generation projects on agency property**
- 4. Design all new buildings to achieve zero-net energy**

DOD SSPP Objective

**Reduce the
Use of
Fossil Fuels**

ASCP Strategic Task

**Implement the
Army Energy
Security
Implementation
Plan**

JBLM

(IMCOM LOE 6)

- 1. Sustain all activities on post using renewable energy sources and generate all electricity on post by 2025**
- 2. Reduce total energy consumption by 30% by 2015**



Energy:

A recipe for zero fossil fuels- three parts conservation to one part renewables



- **Utility Energy Service Contract (UESC).**
 - \$18M investment for \$39M in Improvements
 - 556K MBTU/yr savings
 - \$4.3M/yr cost savings
- **Renewable energy**
 - ~21 % of electricity from Green (renewable) sources (FY07-FY10)
 - Biomass, solar and wind
- **Innovative energy systems**
 - Solar wall
 - Energy from decomposition of waste
 - Hydrogen demonstration project.





Hydrogen Reformation Project



- **\$8M project sponsored by Defense Logistics Agency**
- **Reforms methane from WWTP digesters on Fort Lewis into hydrogen**
- **Hydrogen to be used for 19 hydrogen fuel cell powered forklifts at the Logistics center and 1 hydrogen fuel cell powered shuttle bus to be used to support the transportation of wounded warriors**



Executive Order 13514 ~ JBLM Sustainability Goals

Sustainable Community Team



EO 13514

- 1. Plan for pedestrian friendly sites, near existing employment centers and public transit**
- 2. Participate in regional transportation planning**
- 3. Pursue cost-effective, innovative strategies to minimize consumption of energy, water and materials**
- 4. Ensure compliance with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings***

DOD SSPP Objective

- 1. Coordinate with regional/ local planning to optimize sustainable transportation and energy choices**
- 2. 15% of existing buildings conform to the Guiding Principles on High Performance and Sustainable Buildings by FY15, holding through FY20**

ASCP Strategic Task

- 1. Incorporate sustainability into organizational plans**
- 2. Consolidate & republish existing Army policy, criteria & guidance on sustainability for new construction & renovations**

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(IMCOM LOE 6)

Create sustainable neighborhoods for a livable Fort Lewis community that enhances the Puget Sound Region



More than just the Buildings

Building a Sustainable Community



Sustainable Master Planning Goal: Create sustainable neighborhoods for a livable Fort Lewis community that enhances the Puget Sound Region



Building



Current Real Property Master Plan Revision based on principles of sustainable community design

For Example: American Institute of Architects 10 Principles for Sustainable Communities

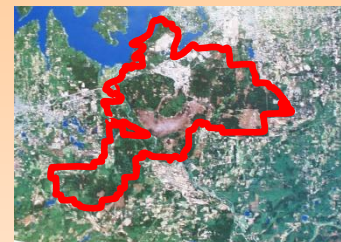
1. Design on a Human Scale
2. Provide Choices
3. Encourage Mixed-Use Development
4. Preserve Urban Centers
5. Vary Transportation Options
6. Build Vibrant Public Spaces
7. Create a Neighborhood Identity
8. Protect Environmental Resources
9. Conserve Landscapes
10. Design [Excellence] Matters



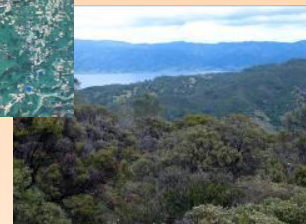
Neighborhood



Installation



Region



Fort Lewis Planning Vision:

In support of the mission, Soldiers, and Families we will create a sustainable community of walkable neighborhoods with identifiable town centers connected by great streets.

Goals and Design Objectives:

- | | |
|--|--|
| <p>Enhance Mission Capabilities</p> <ul style="list-style-type: none"> Compact Development Rangeland Preservation Close-in Training Efficient Transportation Affordable Development | <p>Sustainable Communities</p> <ul style="list-style-type: none"> Narrow Buildings Walkable Neighborhoods Car Parks Public Transit Bike-able Street Grid Linear Parks Planting Strip Multi-story Mixed-use Low Impact Development |
| <p>Great streets</p> <ul style="list-style-type: none"> Street trees Multway boulevard Bulb outs Parkways Shop fronts Sidewalk Buildings Street Cafes Focal Points Connected Sidewalks Bike Paths On-street Parking Large Park Blocks | <p>Walkable Neighborhoods</p> <ul style="list-style-type: none"> Mixed-use Connected Sidewalks Hidden Parking Shop Fronts Views Planting Strips Car Parks Linear Parks Street Grid Visible Entries Aligned Entries 5 Minute Walks Neighborhood Parks |
| <p>Identifiable Town Centers</p> <ul style="list-style-type: none"> Mixed-Use Town Square Multi-Story Buildings Focal Point Regional Character Clear Edges | |



prepared by the urban collaborative, llc
www.urbancollaborative.com

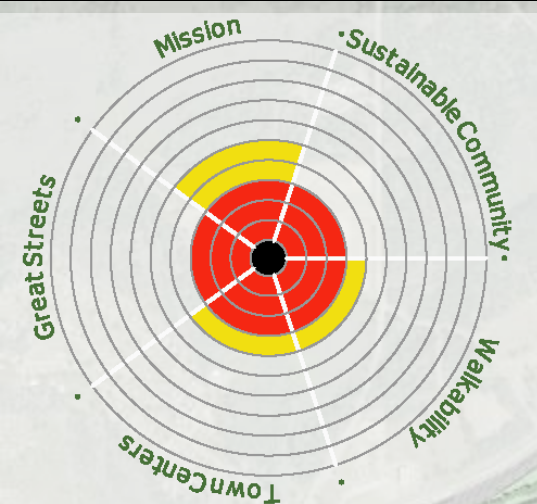


Fort Lewis 2017

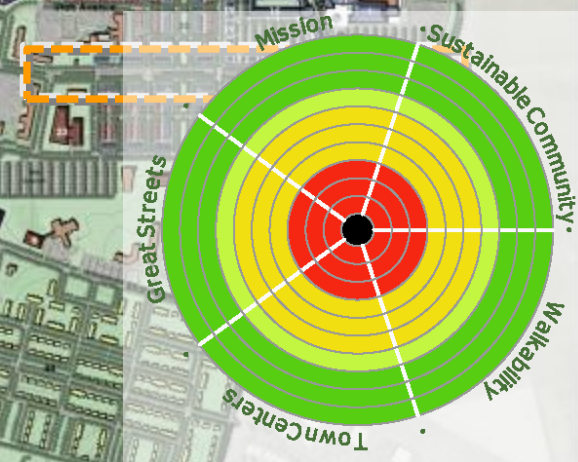
Planning Vision and Design Principles



JBLM Downtown



Historic Downtown
2008



Goal

Legend:

- Duplex, Triplex, or Five-plex
- Single Family Homes
- Rowhouses, Townhomes, and Flats
- Mixed Use Retail
- Installation Support
- Existing Buildings
- Growth Facilities

Phase One

- Exchange Expansion
- MCIS
- Mixed-Use Retail
- Class Six
- MP Motor Pool
- PW Shops
- PW Motor Pool
- CDC Expansion
- CDC

(PH 09945, FY 2008)
(PH 01147, FY 2009)

Phase Two

- Community
- Community Growth Area
- Consolidated Training Center
- Consolidated Training Center Growth Facility
- Mixed Use Retail
- Town Center North Housing
- 122 Rowhouses
- 59 Townhomes above retail
- 35 Ground level retail
- Greenwood Housing
- 122 Rowhouses
- 127 Bungalows

Phase Three

- Historic Quick Food
- Water Hall
- Ballfield Park
- Memorial Park
- Headquarters

(PH 64264, FY 2012)

Phase Four

- Furniture Store
- Bank
- Recreation
- Health Club
- Dining
- Cinema
- Mixed Use Retail
- Riviera Center
- Town Center South Housing
- 200 Rowhouses

Phase Five

- School
- CDC
- Park and Ride
- Growth Facilities
- Mixed Use Retail
- Auto Craft Shop
- Classroom Housing
- 44 Rowhouses
- 60 Bungalows
- 201 units (duplex or triplex)
- Plan developed by the Urban Design Associates
- Classroom Housing
- 122 units (duplex, triplex, or five-plex)
- Plan developed by the Urban Design Associates

Parking Required: 5,956 spaces
Parking Provided: 7,687 spaces
Car Parks: 3,878 spaces
Street Parking: 3,809 spaces

Historic Downtown ADP
The Urban Collaborative, LLC



Joint Base Lewis McChord Downtown Vision



Annual Sustainability Benefits

780 families & 460 single soldiers can live downtown

- Reduces VMT by 11.4 million miles**
- Decreases CO2 emissions by 12.9 million lbs**
- Lowers per family POV costs by \$1,500 annually**





Executive Order 13514 ~ JBLM Sustainability Goals Products & Materials Team



EO 13514

1. Reduce acquisition, use & disposal of toxic materials
2. Divert 50% of non-hazardous solid waste, and construction and demolition materials
3. Increase diversion of compostable material
4. Ensure that 95% of new contract actions for products and services are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, contain recycled content, or are non-toxic or less-toxic alternatives

DOD SSPP Objective

1. 95% of procurement is conducted sustainably
2. 50% of non-hazardous solid waste diverted from landfill by FY15 thru FY20
3. 60% diversion of C&D debris
4. Implement policies to reduce the use of printing paper

ASCP Strategic Task

1. Implement Green Procurement policies to enable the purchase of sustainable products
2. Implement Army's Hazardous Chemical Reduction Plan
3. Establish baseline and targeted reductions for 3 additional chemicals per CY

JBLM

(IMCOM LOE 4)

Cycle all material use to achieve zero net waste by 2025



Achieve Zero Net Waste



Maximize Recycling and Material Reuse
~72% of wastestream currently diverted

Process Aggregates/ Organics.

- Generates estimated annual cost savings of \$750,000



Model Motor Pool

- Identifies, segregates, recycles/ reuses major waste streams
- Saves money
- Increases safety and efficiency





Executive Order 13514 ~ JBLM Sustainability Goals Sustainable Training Lands Team



DoD Sustainable Range Program ~

ensures the long-term viability and continuity of military training and testing ranges while providing good stewardship of the land

DoD Readiness and Environmental Protection Initiative (REPI) ~
enables the military to work with outside stakeholders to limit incompatible development and protect valuable open space and habitat around key test and training areas to support military readiness

Army Strategy for the Environment ~
Meet current and future training, testing and other mission requirements by sustaining land, air and water resources

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(IMCOM LOE 4)

1. Maintain the ability of Fort Lewis to meet its current and future military missions without compromising the integrity of natural and cultural resources, both on the installation and regionally

2. Recover all listed and candidate federal species in the Puget Sound Region



Sustainable Training Lands



- **Army Compatible Use Buffer Program.**
 - Partnership with non-govt agencies to procure and manage acreage to provide additional habitat for species of concern
 - More use of Lewis Lands for military training
- **Habitat preservation = training land preservation**
 - Control of invasive species
 - Management of maneuver damage
- **Re-populate species of concern to other regional areas**
- **FSC Certified Forestry Program since Apr 2002.**





**Executive Order 13514 ~
JBLM Sustainability Goals**



Water Resources Team

EO 13514

- 1. Reduce potable water consumption 26%**
- 2. Reduce industrial, landscaping and agricultural water consumption by 20%**
- 3. Identify, promote and implement water reuse strategies, as consistent with State law**

DOD SSPP Objective

- 1. Reduce potable water consumption intensity by 26% of FY07 levels by FY20**
- 2. Reduce industrial & irrigation water by 20% of FY07 levels by FY20**
- 3. All projects over 5K sq.ft. maintain pre-development hydrology to max extent feasible**

ASCP Strategic Task

- 1. Implement the Army Energy Security Implementation Strategy**
- 2. Achieve EO 13423 water conservation goals and address EO 13514 requirements for water use, as well as stormwater mgmt**

JBLM

(IMCOM LOE 6)

Treat all wastewaters to Class A Reclaim Standards by 2025 to conserve water resources and improve Puget Sound water quality



Conserve Water and Improve Puget Sound Water Quality



Treat all Wastewater Treatment Plant (WWTP) effluent to Class A reclaimed water standards and reuse

- Puget Sound Partnership Federal Caucus Member
- New WWTP.



Manage storm water...
...reuse of storm water
to create wetlands.



Executive Order 13514 ~ JBLM Sustainability Goals

Environmental Management System ISO 14001



EO 13514

**Continue
implementation of
formal environmental
management systems
at all appropriate
organizational levels**

DOD SSPP Objective

**All Environmental
Management
Systems
effectively
implemented and
maintained**

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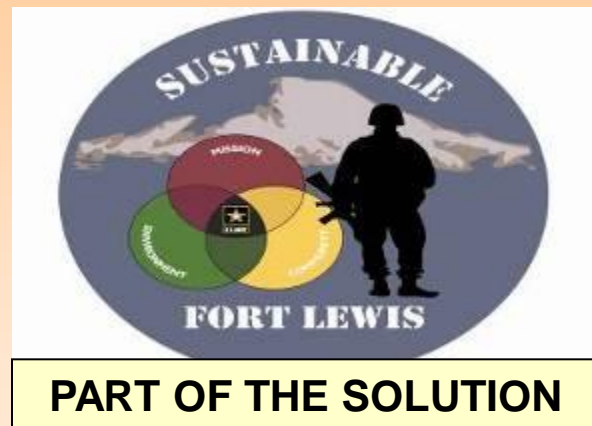
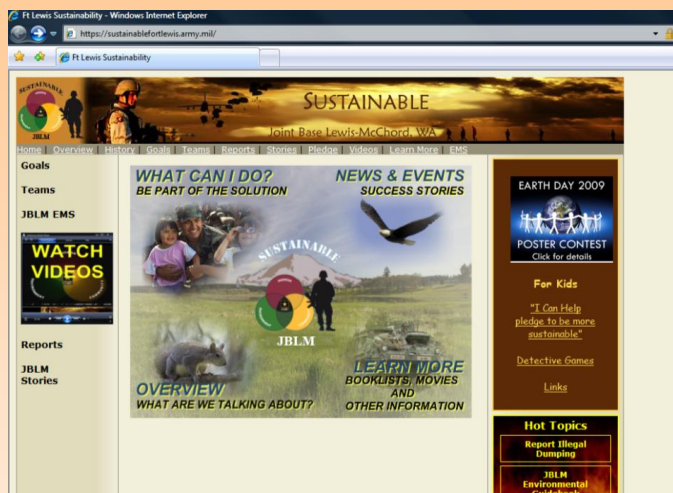
- 1. EMS is integrated
at the Directorate
level with supporting
objectives progress
measured quarterly**
- 2. Military
organizations
integrated via
Environmental
Operating Permits.**



Foster a Sustainable Culture: Becoming “Part of the Solution”

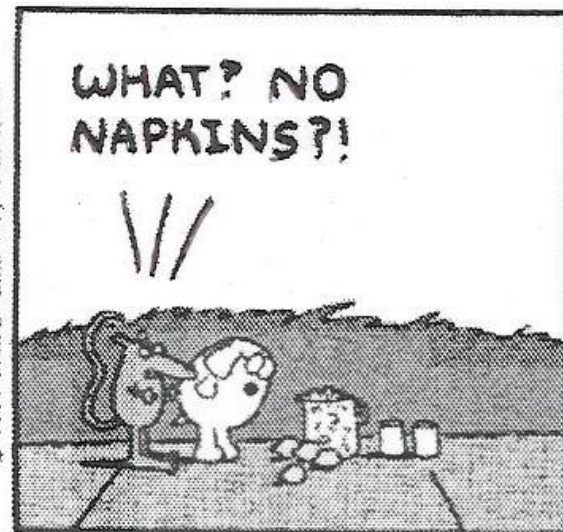
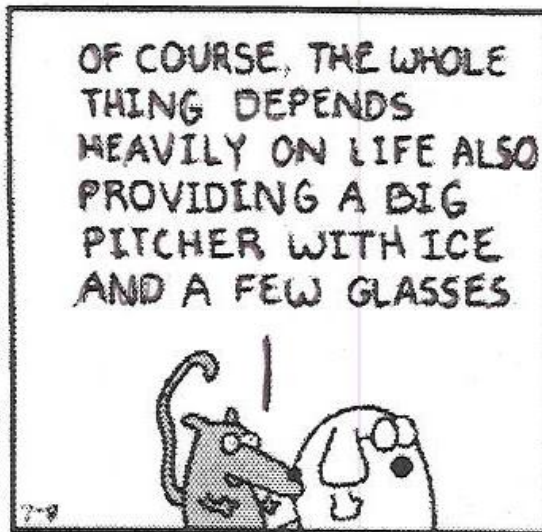
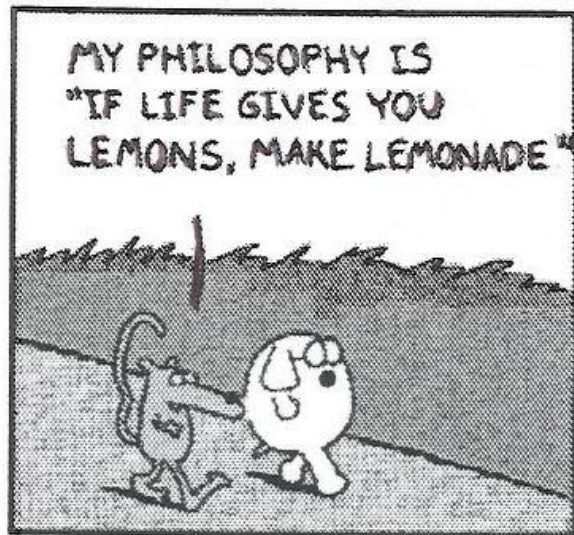
Community Campaign

- Education (video)
- Web site
- Pledging/Commitment
- Branding/signs
- Prompts (Logo)



<https://sustainablefortlewis.army.mil/>

Questions?



**"Argue for your
limitations, and sure
enough, they are yours"**

-Richard Bach

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